

CLAIMS:

1. A process for producing a three-dimensional object, comprising:

5 a) providing a layer of a pulverulent material,

b) applying one or more bonding inhibitors to one or more regions of the layer

wherein the regions to which the bonding inhibitor is applied are the cross section regions of the three-dimensional object, and wherein no bonding inhibitor is applied to regions which are not the cross section regions of the three-dimensional object,

c) repeating a) and b) until all of the cross-section regions of the three-dimensional

10 object are a matrix of inhibitor-applied pulverulent layer regions, wherein the outer boundaries of the three-dimensional object are the interface between inhibitor-applied pulverulent material and pulverulent material without applied inhibitor, and

d) treating the layers at least once to bond the pulverulent material which does not have applied inhibitor,

15 wherein the pulverulent material has a median particle size of from 10 to 200 µm and comprises at least one selected from the group consisting of a polyester, a polyvinyl chloride, a polyacetal, a polypropylene, a polyethylene, a polystyrene, a polycarbonate, PMMA, PMMI, an ionomer, a polyamide, a copolyester, a copolyamide, a terpolymer, ABS and a mixture thereof.

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2. The process as claimed in claim 1, wherein d) is carried out after b).

3. The process as claimed in claim 1, wherein d) is carried out after c).

25 4. The process as claimed in claim 1, wherein the pulverulent material is obtained by grinding, precipitation, anionic polymerization, or a combination thereof, with optional subsequent fractionation thereof.

30 5. The process as claimed in claim 1, wherein the pulverulent material comprises at least one of nylon-6, nylon-11 or nylon-12.

6. The process as claimed in claim 1, wherein the pulverulent material is amorphous or semicrystalline.

7. The process as claimed in claim 1, wherein the pulverulent material has a linear or branched structure.

5 8. The process as claimed in claim 1, wherein at least a portion of the pulverulent material has a melting point of from 50 to 350°C.

9. The process as claimed in claim 1, wherein at least a portion of the pulverulent material has a melting point of from 70 to 200°C.

10 10. The process as claimed in claim 1, wherein the pulverulent material has a median particle size of from 20 to 100  $\mu\text{m}$ .

11. The process as claimed in claim 1, wherein the pulverulent material comprises 15 from 0.05 to 5% by weight of one or more flow aids.

12. The process as claimed in claim 1, wherein the pulverulent material comprises one or more inorganic fillers.

20 13. The process as claimed in claim 12, wherein the fillers comprise glass beads.

14. The process as claimed in claim 1, wherein the pulverulent material comprises one or more inorganic pigments, organic pigments, or both.

25 15. The process as claimed in claim 1, wherein the bonding inhibitor comprises a material with wetting properties.

16. The process as claimed in claim 1, wherein the bonding inhibitor comprises at least one liquid selected from the group consisting of water, an oil, and an alcohol.

30 17. The process as claimed in claim 1, wherein the bonding inhibitor temporarily inhibits bonding.

18. The process as claimed in claim 1, wherein the bonding inhibitor comprises water and at least one surfactant.

5        19. The process as claimed in claim 1, further comprising inhibiting bonding of the inhibitor-applied pulverulent layers by vaporization and cooling.

10      20. The process as claimed in claim 1, further comprising inhibiting bonding of the inhibitor-applied pulverulent layers by forming one or more mechanical barriers between the particles of pulverulent material of the inhibitor-applied pulverulent layers.

15      21. The process as claimed in claim 1, further comprising inhibiting bonding of the inhibitor-applied pulverulent layers by forming one or more thermally insulating regions between the particles of pulverulent material of the inhibitor-applied pulverulent layers.

22. A molding produced by the process as claimed in claim 1.

20      23. The molding as claimed in claim 22, comprising one or more of a nylon-12, a copolyamide, or a copolyester.

25      24. The molding as claimed in claim 22, further comprising at least one filler selected from the group consisting of glass beads and aluminum powder.

30      25. A pulverulent material having a median particle size from 10 to 200  $\mu\text{m}$ , comprising at least one selected from the group consisting of a polyester, a polyvinyl chloride, a polyacetal, a polypropylene, a polyethylene, a polystyrene, a polycarbonate, PMMA, PMMI, an ionomer, a polyamide, a copolyester, a copolyamide, a terpolymer, ABS, and a mixture thereof.

26. The pulverulent material as claimed in claim 25, comprising colored polymer particles having a color that is not white.